IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1-14. (Canceled).

15. (New) A capacitive load driving circuit for supplying a charging-current to a capacitive load and withdrawing a discharging-current from said capacitive load, the load driving circuit comprising:

an output circuit which comprises a power supply terminal, a ground terminal, and an output terminal connected to said capacitive load, and which performs a charging-current supplying operation of supplying a charging-current from said power supply terminal to said capacitive load and a discharging-current withdrawing operation of withdrawing a discharging-current from said capacitive load to said ground terminal; and

an overcurrent protection circuit that detects a short circuit between said output terminal and said ground terminal so as to stop or suppress said charging-current supplying operation, and that detects a short circuit between said output terminal and said power supply terminal so as to stop or suppress said discharging-current withdrawing operation, wherein:

said output circuit selects any one of said charging-current supplying operation and said discharging-current withdrawing operation depending on the state of a control input signal,

said output circuit continues to charge said capacitive load in said charging-current supplying operation until the electric potential of said capacitive load reaches a predetermined upper amplitude limit lower than the electric potential of said power supply terminal, and continues to discharge said capacitive load in said discharging-current withdrawing operation until the electric potential of said capacitive load reaches a predetermined lower amplitude limit higher than the electric potential of said ground terminal,

said output circuit comprises: a first NPN transistor the collector of which is connected to said power supply terminal and the emitter of which is connected to said output terminal; and a first PNP transistor the collector of which is connected to said ground terminal and the emitter of which is connected to said output terminal, and

said overcurrent protection circuit comprises: a second NPN transistor the collector of which is connected to the base of said first NPN transistor, and the emitter of which is connected to said output terminal, and further the base of which is connected to a first voltage supply for generating a

predetermined electric potential that is higher than the electric potential of said ground terminal and lower than or equal to said lower amplitude limit; and a second PNP transistor the collector of which is connected to the base of said first PNP transistor, and the emitter of which is connected to said output terminal, and further the base of which is connected to a second voltage supply for generating a predetermined electric potential that is lower than the electric potential of said power supply terminal and higher than or equal to said upper amplitude limit.

16. (New) A capacitive load driving circuit for supplying a charging-current to a capacitive load and withdrawing a discharging-current from said capacitive load, the load driving circuit comprising:

an output circuit which comprises a power supply terminal, a ground terminal, and an output terminal connected to said capacitive load, and which performs a charging-current supplying operation of supplying a charging-current from said power supply terminal to said capacitive load and a discharging-current withdrawing operation of withdrawing a discharging-current from said capacitive load to said ground terminal; and

an overcurrent protection circuit that detects a short circuit between said output terminal and said ground terminal so

as to stop or suppress said charging-current supplying operation, and that detects a short circuit between said output terminal and said power supply terminal so as to stop or suppress said discharging-current withdrawing operation, wherein:

said output circuit selects any one of said charging-current supplying operation and said discharging-current withdrawing operation depending on the state of a control input signal,

said output circuit comprises: a first NPN transistor the collector of which is connected to said power supply terminal and the emitter of which is connected to said output terminal; and a first PNP transistor the collector of which is connected to said ground terminal and the emitter of which is connected to said output terminal, and

said overcurrent protection circuit comprises: a second NPN transistor the collector of which is connected to the base of said first NPN transistor, and the emitter of which is connected to said output terminal, and further the base of which is connected to a first voltage supply for generating a predetermined electric potential higher than the electric potential of said ground terminal; and a second PNP transistor the collector of which is connected to the base of said first PNP transistor, and the emitter of which is connected to said output terminal, and further the base of which is connected to a second

voltage supply for generating a predetermined electric potential lower than the electric potential of said power supply terminal.

17. (New) A capacitive load driving circuit for supplying a charging-current to a capacitive load and withdrawing a discharging-current from said capacitive load, the load driving circuit comprising:

an output circuit which comprises a power supply terminal, a ground terminal, and an output terminal connected to said capacitive load, and which performs a charging-current supplying operation of supplying a charging-current from said power supply terminal to said capacitive load and a discharging-current withdrawing operation of withdrawing a discharging-current from said capacitive load to said ground terminal;

a current generation circuit that selects, depending on the state of a control input signal, any one of a first state where a first current is supplied to said output circuit so as to cause said output circuit to select said charging-current supplying operation and a second state where a second current is supplied to said output circuit so as to cause said output circuit to select said discharging-current withdrawing operation;

a charging and discharging control circuit that detects the electric potential of said capacitive load and thereby controls

and causes said output circuit to continue said charging-current supplying operation until the electric potential of said capacitive load reaches a predetermined upper amplitude limit, to stop said charging-current supplying operation when said electric potential reaches said predetermined upper amplitude limit, to continue said discharging-current withdrawing operation until the electric potential of said capacitive load reaches a predetermined lower amplitude limit, and to stop said discharging-current withdrawing operation when said electric potential reaches said predetermined lower amplitude limit; and

an overcurrent protection circuit that detects a short circuit between said output terminal and said ground terminal so as to stop or suppress said charging-current supplying operation, and that detects a short circuit between said output terminal and said power supply terminal so as to stop or suppress said discharging-current withdrawing operation, wherein:

said output circuit comprises: a first NPN transistor the collector of which is connected to said power supply terminal and the emitter of which is connected to said output terminal; and a first PNP transistor the collector of which is connected to said ground terminal and the emitter of which is connected to said output terminal,

said overcurrent protection circuit comprises: a second NPN transistor the collector of which is connected to the base of said first NPN transistor, and the emitter of which is connected to said output terminal, and further the base of which is connected to a first voltage supply for generating a predetermined electric potential that is higher than the electric potential of said ground terminal and lower than or equal to said lower amplitude limit; and a second PNP transistor the collector of which is connected to the base of said first PNP transistor, and the emitter of which is connected to said output terminal, and further the base of which is connected to a second voltage supply for generating a predetermined electric potential that is lower than the electric potential of said power supply terminal and higher than or equal to said upper amplitude limit, and

said charging and discharging control circuit controls the base currents of said first NPN transistor and said first PNP transistor, so as to control the execution and the stop of said charging-current supplying operation and said discharging-current withdrawing operation.

18. (New) A capacitive load driving circuit according to claim 17, wherein said charging and discharging control circuit comprises:

a third voltage supply that generates an electric potential equal to said upper amplitude limit;

a fourth voltage supply that generates an electric potential equal to said lower amplitude limit;

a charging control differential switch circuit, one input terminal of which receives the electric potential of said capacitive load, and the other input terminal of which receives the electric potential of said third voltage supply; and

a discharging control differential switch circuit, one input terminal of which receives the electric potential of said capacitive load, and the other input terminal of which receives the electric potential of said fourth voltage supply; and

wherein:

said charging control differential switch circuit performs on-off control of the base current of said first NPN transistor depending on a result of comparison between the electric potential of said capacitive load and the electric potential of said third voltage supply, while said discharging control differential switch circuit performs on-off control of the base current of said first PNP transistor depending on a result of comparison between the electric potential of said capacitive load and the electric potential of said fourth voltage supply.

19. (New) A capacitive load driving circuit according to claim 18, wherein:

the electric potentials of said third and fourth voltage supplies are variable, and

the electric potential of said first voltage supply varies in linkage with the electric potential of said fourth voltage supply, while the electric potential of said second voltage supply varies in linkage with the electric potential of said third voltage supply.

20. (New) A capacitive load driving circuit according to claim 18, wherein the electric potential of said first voltage supply is equal to the electric potential of said fourth voltage supply, while the electric potential of said second voltage supply is equal to the electric potential of said third voltage supply.